

FOR MYSORE STATE

Public (RDP) (1954) Department

SERIES.

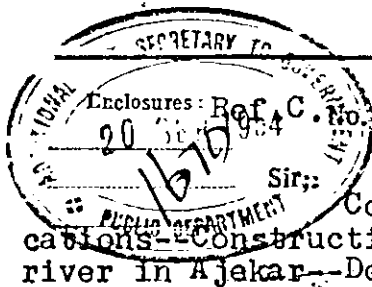
G.O. No. 1784

Dated 25-9-1954

[Despatch Abstract.]

Community Projects - South Kanara
Area - Block III - Communication
Construction of a cement causeway
across Shivhattu River on the Ajek
Dondraingadi Road - Estemala

Department From (Name) Sri. H. Narasimha, Designation Project Executive Officer Station South Kanar, Mangalore.	Received _____ Registered _____ To The Director of Community Projects & Ex.Officio Addl. Secretary to Government, Madras.
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Enclosures: Ref C. No. 2203/53-B. dated 12-9-1954. 195

 Sir: Community Projects--South Kanara--Block III--Communi-
 cations--Construction of a R.C. Deck Slab--Cause way across Thirthattu
 river in Ajekar--Dondarangadi Road--Estimate--Sanction--Requested.

I submit herewith an estimate in duplicate with site plan etc. for formation of road from Ajekar to Dondarangadi a length of about 5 miles and construction of a causeway. The particulars required are furnished below:

1. Block : III.
2. Name of work. : Formation of a road from Ajekar to Dondarangadi with a causeway.
3. Whether the work ~~xxx~~ is approved by the Project Executive Committee and included in the Programme.) Yes. This corresponds to item No.46 under communications in Block III in the Overall Programme.
4. Estimated cost of the work. : 1. Construction of a causeway - 21,000
 2. Improving the existing cart track from Ajekar to Dondarangadi about 5 miles 4 furlongs. 4600
 Rs. 25,600/-
5. Villagers' contribution : Improving the cart track by Voluntary labour. Rs. 4,600/-
6. Expenditure to be borne by the Community Project funds.: Rs.21,000/- for the construction of the causeway.

7. Remarks: This work relates to the forming of a road from Ajekar to Dondarangadi about 5½ miles with a causeway for the Thirthatta river. At present there is only a cart track and it requires widening.

Dondarangadi is a locality where the malnad villages of Yellar, KukkaJe, and Kadathela of Karkal Taluk meet. These villages are completely out of reach in the rainy season on account of the existence of the Thirthatta river and are consequently most neglected. The people in all these villages find it difficult to go to Karkal or Ajekar for selling their produce etc. for want of communication facilities. The only way of developing this neglected part of the Taluk is by providing them proper communication facilities. The villagers have come forward to do the road work by voluntary labour at an estimated cost of Rs.4600/- and they are not able to contribute anything for the causeway.

P.T.O.

The estimated cost of the causeway is Rs.21000/- and the same has been technically sanctioned by the Divisional Engineer (Highways) Mangalore. .Though in this particular case, the contribution from villagers concerned is low, the overall contribution for Community Project works by the public and the backwardness of the area justify the expenditure involved.

I therefore request that administrative sanction to the estimate for construction of a causeway for Rs.21,000/- may be accorded and the estimate returned for taking necessary further action. This being a costly work, the question of entrusting its execution to the Highways Department may be considered. It may, however, be ensured that the work would be completed and paid for before 31--3--1955.

Connected file with estimate and plan is herewith enclosed.

Yours faithfully,

H. N. N. M.
Project Executive Officer 15/9/54

JC/15-9-54.

2/10/54

The estimate provides for a
Causeway across the Thirithattu Hole in Aikar
Dondaragady Road

Catchment area of the river above the
proposed causeway is 13.88 square miles

The maximum flood discharge of the river

calculated by Ryves' formula is 5775 cusecs

checked by
S. P. S. S. S.

Sanction
17/5/44

The discharge of the river when the flood
level is at the proposed crest level of
the causeway @ 98.40 is 5255 cusecs.

13 vents of 10'-0" x 4'-0" have been provided

and the velocity through vents for the

above discharge is 11.09 ft./sec.

this velocity can be allowed as the
for the foundation for 1st six piers & abutment

is on rock and the foundation for

the last six piers and its abutment

has been taken to 7'-0" below bed level

is gravelly soil and aprons with retaining

walls have been provided for the last

six vents

Sheet rock is available for a width of 70 ft from the left abutment and beyond 70 ft up to the right abutment the soil is shingle mixed with boulders up to 4'0" below bed level. It is stated that particulars of soil below 4'0" below bed level could not be ascertained as there was flowing water in the river.

Hence Cement concrete 1:4:8 $\frac{1}{2}$ " thick has been proposed for foundation of abutments on granite rock after the same is suitably prepared. Dowel bars ~~are~~ are provided for anchoring the concrete to the granite rock. For foundation of 1 pier on the sheet (1:4:8) and 1'0" level course of 2 Cement concrete is provided ~~that the superstructure to be directly raised on the sheet rock after leveling the rock.~~ Dowel bars are provided for connecting the ~~lower~~ level course of the piers to the granite rock foundation.

The slab is proposed to be fixed to
the piers and abutments by dowel bars.

Cause way across Thirthattu on Ajakay Dondagay Road

Hydraulic Calculations

I. Catchment area above the proposed site of
Cause way = 13.88 sq. Miles. (Separate
tracing from Valuelampatti attached)

Average Bed level of the river = 93.30.

Q = Maximum flood discharge Q = $Cm^{2/3} \cdot C \cdot 1000$

$$Q = 1000 \times 13.88^{2/3} = 5775 \text{ cusecs.}$$

II. Derivation of the value of C at the proposed site of cause way.

Observed H.F.L. at 200' below 98.72
at proposed site 98.12

100' below 97.8

Surface fall = 0.90 ft in 300 ft

or say 330 ft. ✓

Area of the water section at 100' below proposed cause way

$$1^{\text{st}} \text{ lit} - 18^{\text{th}} \text{ lit} = \frac{3}{2} \times 0.29 \times 3 = 0.4450 \text{ ft}$$

$$\text{Stripoidal 2nd lit} = \frac{0.29 + 4.64}{2} \times 10$$

$$\text{3rd lit} = \frac{4.64 + 5.28}{2} \times 10$$

$$\text{4th lit} = \frac{5.28 + 5.45}{2} \times 10$$

$$\text{5th lit} = \frac{5.45 + 5.70}{2} \times 10$$

$$\text{6th lit} = \frac{5.70 + 7.45}{2} \times 10$$

$$\text{7th lit} = \frac{7.45 + 6.39}{2} \times 10$$

$$\text{8th lit} = \frac{6.39 + 5.67}{2} \times 10$$

$$\text{9th lit} = \frac{5.67 + 5.84}{2} \times 10$$

$$\text{10th lit} = \frac{5.84 + 5.10}{2} \times 10$$

$$\text{11th lit} = \frac{5.10 + 5.29}{2} \times 10$$

$$\text{12th lit} = \frac{5.29 + 5.59}{2} \times 10$$

$$\text{13th lit} = \frac{5.59 + 5.62}{2} \times 10$$

Calculations

I Hydraulic particulars.

Catchment area of the hole above the proposed S.O. of causeway = 13.88 sq. m. Separate trapping enclosed

Average Bed level 93.30.

Maxm discharge = $Q = C m^{2/3}$, where $C = 1000$ in Manning's formula

$$= 1000 \cdot (13.88)^{2/3}$$

$$5775 \text{ cfs}$$

Discharge provided through the Vents of the causeway assuming a velocity of 8 ft per second, the bed being rocky

Top of the piers & abutments = 97.30.
Depth of water passing through vents 97.30 - 92.30 = 5 ft.

$$\text{Discharge} = 10 \times 4 \times 8 = 352$$

The normal flow of the river can be taken as half the maximum discharge at this site

$$5775 / 2 = 2887.5 \text{ cfs or say } 2888 \text{ cfs}$$

Therefore the normal flow will find its exit through the vents provided in the causeway. The discharge to be provided over the causeway

$$= 5775 - 3520 = 2255 \text{ cfs}$$

assuming a velocity of 8 ft per second the depth of flow over the causeway will be

$$\frac{2255}{8 \times 40} = 2.01 \text{ ft or say } 2 \text{ ft}$$

The R.C. deck slab provided over the piers is dowelled into the masonry with 1" diameter rods bent at right angles into the slab with the masonry and set in Mass concrete with cross-section bottom plate 3/8" thick & bolt, as a safety measure against the uplift pressure.

II Pressure at the bottom of the pier.

Impact factor = $\frac{15}{L + 20}$ where L is the effective span

$$\frac{15}{12 + 30} = 0.47$$

Adoption of an impact factor of 1.47

Live load = $25000 \times 2 \times 1.47$
Self wt. Concrete base $12 \times 2 \times 0.7 \times 140$
Masonry and grout $12 \times 2 \times 5.6 \times 140$
 $12 \times 2 \times 2.5 \times 140$

2.21 tons
1.05 ton
8.40 ton
3.75 ton

Bearing area

volume $1500' = \frac{46.01}{30} \times 1.53 \text{ tons, against } 6 \text{ tons that can dam rubble masonry in cement mortar can take safely.}$
carrying capacity of the soil

Load as above — $46.01 \text{ tons} \cdot 46.01 \text{ ton}$
 6.56 ton
 Concrete base — $17\frac{1}{2} \times 4' \times 1'6" \times 140 = 2.43$
 add for cut walls etc 55.00 ton

Bearing area $17\frac{1}{2} \times 4 = 70.53 \text{ ft.}$

Load per ft $\frac{55}{70} = 0.79 \text{ tons. when as ordinary soil can take } 1\frac{1}{2} \text{ to } 2 \text{ tons per sq ft. and hence it is safe}$

Depth of foundation

$h = \frac{P}{W} \left(\frac{1 + \sin \alpha}{1 + \sin \beta} \right)$ where $\alpha = 30^\circ$ angle repose of the soil

$$= \frac{0.79 \times 2240}{100} \left(\frac{1 + 0.5}{1 + 0.5} \right)^2 = 3.29 \text{ ft.}$$

where as 5' depth of foundation are adopted & hence it is safe

Thickness of the slab: — No separate calculation is enclosed. A thickness of 10.25" has been adopted as per I.E.C. Chart "A" loading for 12' wide road way under R.P.S.E. & plan No. 78/50 —

Dimensions: Top and bottom $0.44 + 1 = 3.9 \text{ ft.}$
 left side $4'6" \text{ on the}$

return top to bottom $0.44 = 3'0 \text{ in.}$

Crest level	Bed level	Difference	Mean	Length		Wetted Perimeter
98.40			0.035	1	0.04 ~~0.04~~ m	1
	98.33	0.07 ✓	2.48	0	0	0
	93.51	4.89 ✓	4.82 ✓	10	48.20 ✓	10
	93.66	4.74 ✓	4.43 ✓	10	44.30 ✓	10.2
	94.28	4.12 ✓	4.55 ✓	10	45.50 ✓	10.23
	93.43	4.97 ✓	5.25 ✓	10	52.50 ✓	10.00
	92.88	5.52 ✓	5.27 ✓	10	52.70 ✓	10.00
	93.38	5.02 ✓	5.77 ✓	10	57.70 ✓	10.25
	91.88	6.52 ✓	6.17 ✓	10	61.70 ✓	10.15
	92.58	5.82 ✓	5.38 ✓	10	53.80 ✓	10.15
	93.57	4.83 ✓	4.90 ✓	10	49.0 ✓	10.00
	93.43	4.97 ✓	4.80 ✓	10	48.0 ✓	10.00
	93.78	4.62 ✓	4.62 ✓	10	46.20 ✓	10.00
	93.78	4.62 ✓	4.67 ✓	10	46.70 ✓	10.00
	93.68	4.72 ✓	5.07 ✓	10	50.70 ✓	10.20
	92.98	5.42 ✓	3.12 ✓	10	31.20 ✓	10.80
	97.58	0.82 ✓	0.82 ✓	5	4.10 ✓	5.00
	97.58	0.82 ✓	0.41 ✓	3.50	1.44 ✓	3.50
	98.40	0.00 ✓				
					192.92 ✓	151.55 ✓

$$\frac{5.668 \times 4.57}{\sqrt{4.57 + 1.278}}$$

$$\frac{25.90}{2.14 + 1.278}$$

Discharge when flood is
at crest level $= A \times V = 693.28 \times 7.58$
5255 cusecs.

Vent way $11 \text{ no.} \times 10.0'' \times 4.0 = 440 \text{ sq. ft.}$

$$\text{Velocity through vents} = \frac{5255}{440} = 11.94 \text{ ft/sec}$$

$$A \text{fflux} \left(\frac{V}{58.6} + 0.05 \right) \left\{ \left(\frac{A}{a} \right)^2 - 1 \right\}$$

$$\left\{ \frac{(7.58)^2}{58.6} + 0.05 \right\} \left\{ \left(\frac{693.28}{440} \right)^2 - 1 \right\}$$

$$\left\{ 1.11 + 0.05 \right\} \left\{ 2.496 - 1 \right\}$$

$$= 1.735$$

With 12 vents of 10.0'', afflux is 1.24

With 13 vents of 10.0'' afflux is 0.892

Hence 13 vents of 10.0'' may length may
be adopted

~~Afflux~~ Velocity through vents
when flood is at crest level

$$= 1.1 \frac{A}{a} \cdot V$$

$$= 1.1 \times \frac{693.28}{520} \times 7.58$$

$$11.09 \text{ ft/sec.}$$

Construction of a Causeway across Shithathu
Dondavady ^{Road}
Detailed Estimate

Details of work.	Num-ber	Measurements in feet			Area or Contents	Total quantity of each description of work.
		Length	Breadth	Depth		
Earthwork excavating and depositing on bank for foundation in all soils except rock requiring blasting.						
For foundation of left abutment	1	17'-0"	4'-9"	6'-0"	485	
For foundation of wings of left abutment	2	3'-3"	4'-9"	6'-0"	185	
For foundation of Right abutment	1	18'-6"	6'-3"	15'-0"	1734	
For foundation of wings of right abutment	2	12'-9"	6'-3"	15'-0"	328	
For foundation of piers nos 7 to 11	5	17'-6"	4'-0"	7'-9"	2713	
For foundation of pier no 12	1	17'-6"	4'-0"	11'-3"	788	
For excavating ventway of 12 th & 13 th spans	2	10'-0"	16'-0"	5'-0"	1600	
For having cut on the upstream and down stream side	1	100'-0"	8'-0"	5'-0"	4000	
For foundation of retaining walls on the upstream side & for apron from 7 th pier to Right abutment	6	8'-0"	4'-0"	7'-0"	1344	
For easing of gradient of approach road on the right side etc					1823	
					15,000	
2) Bedding hard granite rock for foundation of piers and abutment					700 Sq ft	

Details of work.	Num- ber	Measurements in feet.			Area or Contents	Total quantity of each describing work.
		Length	Breadth	Depth		
(3) Cement concrete (1:4:8) using hard granite broken stone $1\frac{1}{2}$ " size.						
For foundation of left abutment.	1	17'-0"	4'-9"	1'-6"	121	
For foundation of wings of left abutment.	2	3'-3"	4'-9"	1'-6"	46	
For foundation of Right abutment.	1	18'-6"	6'-3"	1'-6"	173	
For foundation of wings of right abutment.	2	1'-9"	6'-3"	1'-6"	33	
For foundation of piers nos 7 to 12.	6	17'-6"	4'-0"	1'-6"	630	
For foundation of head walls on - do.	6	8'-0"	4'-0"	1'-0"	192	
	1	73'-0"	4'-0"	1'-0"	292	
					47	
For foundation of 13th Six piers (level 23 course).	6	11'-0"	2'-6"	1'-0"	1050	
					240	
					1727	1727
Coursed Rubble Masonry II Sort in Cement Mortar (1:5)						
Abutment 1st footing	1	16'-0"	3'-9"	2'-0"	120	
do - wings - do -	2	3'-3"	3'-9"	2'-0"	49	
Abutment 2nd footing	1	16'-0"	2'-9"	2'-0"	88	
do - wings - do -	2	4'-3"	2'-9"	2'-0"	47	
Abutment 3rd footing	1	16'-0"	2'-0"	1'-11"	61	
do - wings - do -	2	5'-0"	2'-0"	1'-11"	38	
Backlog behind slab on abutment	1	7'-0"	1'-0"	1'-1 $\frac{1}{4}$ "	18	
Left abutment wings - 97.90 to 99.60.	2	7'-0"	2'-0"	1'-8 $\frac{1}{4}$ "	47	
Abutment 1st footing	1	17'-6"	5'-3"	1'-6"	138	
do - wings - do -	2	1'-9"	5'-3"	1'-6"	28	
Abutment 2nd footing	1	17'-0"	4'-9"	2'-0"	162	
do - wings - do -	2	2'-0"	4'-9"	2'-0"	38	
Abutment 3rd footing	1	16'-6"	4'-3"	2'-0"	140	
do - wings - do -	2	2'-9"	4'-3"	2'-0"	47	

Details of work	Num- -br	Measurements in feet.			Area or Contents	Total quantity of each descrip- tion of work.
		Length	Breadth	Depth		
Coursed Rubble Masonry	II	Set in	Cement	Mortar (1:5)	(Continued)	
		B.F.			~~1012~~ ~~1026~~	✓
Right abutment 4 th footing	1	16'-0"	3'-9"	2'-0"	120	✓
do - wings do -	2	~~2'-6"~~ 2'-3"	3'-9"	2'-0"	~~38~~ 49	✓
Right abutment 5 th footy.	1	16'-0"	3'-0"	1'-0"	48	✓
do - wings do -	2	2'-10 1/2"	3'-0"	1'-0"	17	✓
Right abutment 6 th footy.	1	16'-0"	2'-6"	1'-0"	40	✓
do - wings do -	2	3'-1 1/2"	2'-6"	1'-0"	16	✓
Right abutment 7 th footy.	1	16'-0"	2'-0"	0'-11"	29.	✓
For backing behind slab on abutment.	1	16'-0"	1'-0"	1'-1 1/4"	18	✓
For left abutment wings from 97.90 to 99.60	2	6'-3"	2'-0"	1'-8 1/4"	42	✓
		Sum does:			20	✓
					1600	✓

Coursed Rubble Masonry I Set in Cement Mortar (1:5)

For 1st footing of pier nos 7-12	6	16'-6"	3'-0"	2'-6"	743	✓
For 2nd footing of pier nos 7-12	6	16'-0"	2'-6"	3'-0"	720	✓
For Superstructure of 1st six piers from 93.00 to 97.90	6	12'-0"	2'-0"	3'-11"	~~480~~ 564	✓
For Superstructure of 2nd piers from 93.00 to 97.90	6	12'-0"	2'-0"	4'-11"	708	✓
For cut walls of 1st six piers	6x2	2'-0"	1'-9"	3'-11"	82	✓
For cut walls of piers	6x2	2'-0"	1'-9"	4'-11"	103.	✓
For pillars	4	2'-0"	2'-0"	2'-5"	39.	✓
		Sum does			87	✓
					2100	✓
					3000	✓

(b) Cement Concrete (1:2:4) using broken granite stone 3/4

For bed block over abutments	2	12'-0"	1'-0"	0'-7"	14	✓
For ~~bed~~ bed block over piers	12	12'-0"	2'-0"	0'-7"	168	✓
~~For wing wall~~	1	~~11'-1"~~ 11'-1"	12'-0"	0'-3"	~~462~~ 463	✓
For ramps on either side approach.	2	15'-0"	12'-0"	0'-3"	90	✓
For coping over pillars	2x2	2'-6"	2'-6"	0'-6"	13	✓
For masonry above cut walls of piers					97	✓
					332	✓
					350	✓

Details of Work	Num -br	Measurements in feet			Area or Contents	Total quantity each description of work
		Length	Breadth	Depth		
1 Reinforced Cement Concrete (1:2:4) including cost of cement and steel and girds and centering, and placing & curing of concrete. Complete for deck slab		156'-0"	12'-0"	0'-10 1/4"	1599	1600 ✓
~~2 Reinforced concrete end of deck slab.~~		~~15'-0"~~	~~12'-0"~~	~~0'-10 1/4"~~	~~151~~	~~1600~~ ✓
3 Dry Stone Masonry for retaining walls of apron			2		1750	✓
For 1st footing of retaining wall apron on the up stream side	6	9'-6"	2'-0"	3'-0"	342	✓
For 2nd footing of retaining wall apron on the up stream side	6	9'-0"	2'-6"	3'-0"	405	✓
For 1st footing of retaining wall of apron on the down stream side	1	72'-0"	2'-0"	3'-0"	432	✓
For 2nd footing of retaining wall of apron on the up stream side	1	72'-0"	2'-6"	3'-0"	540	✓
					31	
					1750	
Cement Concrete 1:1 1/2:3 rising and 33 1/3% of 4" to 2 1/2" inch for wearing course	1	156'-0"	12'-0"	0'-3"	468	✓
① Rough stone dry packing for apron.						
Between piles nos 7-12	6	10'-0"	16'-0"	1'-0"	840	
Beyond piles on down stream side		72'-0"	10'-0"	1'-0"	720	
					1560	
1 Providing granite girdle posts on piers.	24	4'-0"	0'-4"	0'-4"	11	✓
2 Providing Holding down bars (1" dia wds) with nuts & bolts for the bottom against uplift for pressure						✓
13 Baling out waste & forming macadam road on either side						✓
14 Unfaced stem & convergences						✓
15 Potts surface used						✓
3/10						
2. Kamamohan Nayak						
J.E. Ch. Mangalore						

Sheet to accompany the estimate for construction of a
Causeway across Thiruthathu hole in Ajaka
Doddaravangadi Road

Quantity	Description of work	Rate	Per	Amount	Total
1000 cu	(1) Earthwork excavation for foundations in all soils except rock requiring blasting	RS. 21.60 A. 0 P. 0	1000 cu	21.60	21.60
100 cu	(2) Cement Mortar 1:5	21.60	100 cu	21.60	21.60
100 cu	Sand cost	2.80	100 cu	2.80	2.80
20 cu	Cement cost	98.80	25 cu	78.10	78.10
25 cu	Sand lead 1/2 m	1.90	100 cu	1.90	1.90
100 cu	Cement lead 4 m	10.12	100 cu	10.12	10.12
100 cu	Mixing mortar	4.80	100 cu	4.80	4.80
	Find aries				
	Total			108.40	108.40
	(3) Random Rubble masonry in Cement mortar 1:4				
	Rough stone cost	16.00	100 cu	16.00	16.00
	Stone lead 1 m	8.70	100 cu	8.70	8.70
	Cement mortar 1:4	12.24	100 cu	12.24	12.24
	Masons 2nd class	2.12	100 cu	2.12	2.12
	Man mazadoos	1.80	100 cu	1.80	1.80
	Woman mazadoos	0.13	100 cu	0.13	0.13
	Find aries				
	Total			41.96	41.96
	(4) Coursed Rubble Masonry in Cement mortar 1:5				
	Coursed rubble stone	28.00	100 cu	28.00	28.00
	Rough stone	16.00	100 cu	16.00	16.00
	Stone lead 1 m	8.70	100 cu	8.70	8.70
	Cement mortar 1:5	12.24	100 cu	12.24	12.24
	Masons 2nd class	2.12	100 cu	2.12	2.12
	Man mazadoos	1.80	100 cu	1.80	1.80
	Woman mazadoos	0.13	100 cu	0.13	0.13
	Find aries				
	Total			61.99	61.99
	(5) Concrete laid broken stone 1 1/2 size in cm 1:4:8				
	Broken stone	23.00	100 cu	23.00	23.00
	Stone lead	8.70	100 cu	8.70	8.70
	Cement mortar 1:4	13.40	100 cu	13.40	13.40
	Mason 2nd class	2.12	100 cu	2.12	2.12
	Man mazadoos	1.80	100 cu	1.80	1.80
	Woman mazadoos	0.13	100 cu	0.13	0.13
	Find aries				
	Total			49.15	49.15

Data sheet to accompany the estimate for

Quantity.	Description of work	Rate	Per.	Amount.	Total.
	b) Concrete and stone 3/4 size metal in cement mortar 1:2:4, for reinforced concrete work			38.10.3	38.10.3 ^x
92 cu	Broken stone	42.00	100	7.12.2	7.12.2 ^x
92 cu	Stone lead 1/2 m	8.7.0	100	8.1.7	1.2.5 ^x
46 cu	Sand cost	2.8.0	100	1.2.5	90.9.18
23 cu	Cement mortar	98.80	254	0.11.6	0.11.6 ^x
46 cu	Sand lead 1/2 m	1.9.0	100	23.13.1	23.13.1
23 cu	Cement lead 4 m	103.12.6	100	2.12.0	2.12.0
1 no	Mason 2nd class	2.12.0	100	9.0.0	9.0.0
6 nos	Man masons	1.8.0	100	8.2.0	8.2.0
10 nos	Woman masons	0.13.0	100	2.3.0	2.3.0
15	End on	183.0.0	100	183.0.0	183.0.0
	c) Reinforced concrete work using 3/4 size metal (mix 1:2:4) including bending, steel, tying, gills and centering and curbing			1.13.3	1.13.3
1 cu	Concrete 1:2:4	183.0.0	100	1.14.10	1.14.10
6.95	Steel corr. & R.	20.0.0	100	0.14.8	0.14.8
1.305	Centering	0.11.3	100	0.5.8	0.5.8
6.95	Bending and tying	5.12.1	100	6.1.2.7	6.1.2.7
15	gills etc. Scaffolding	2.3.0	100	5.0.0	5.0.0
	Lead Statement			5.0.0	5.0.0
	Sand = 1/2 F head load				
	Cement = 4 m. from Mangalore				
	Stone lead = 1 m. 97.				
	Certified that the above and other information provided in the estimate are correct to the best of my knowledge and enquiry				
	Subbaraya Setty				
	Sd/- C. S. S. S.				
	28/8/53				

Don't say anything

Cement Mortar

100 c ft	Sand	2-8-0	100 c ft	2-8-0
25 c ft	Cement	98-8-0	25 c ft	98-8-0
100 c ft	Sand Lead 1/2 ft Head Lead	1-9-0	100 c ft	1-9-0
25 c ft	Cement Lead 44 Mule y Road	103-12-6	100 c ft	2-5-15-2
100 c ft	Mixing Mortar	4-8-0	100 c ft	4-8-0
	Sundries			0-3-10
				<u>123-4-0</u>

Coursed Rubble Masonry 1 Part in Cement Mortar (1:5)

110 c ft	Stone (including bind stone)	38-0-0	100 c ft	41-12-10
28 c ft	Cement Mortar (1:5)	108-4-0	100 c ft	30-7-2
		~~99-2-0~~		
10 nos	Mason Delans	2-12-0	each	27-2-0
4 nos	Man Maysdown	1-8-0	each	6-0-0
4 nos	Woman Maysdown	0-12-0	each	3-0-0
110 c ft	Lead for stone	8-7-0	100 c ft	9-4-6
	Sundries			0-3-6
				<u>118-4-0</u>

Cement concrete (1:2:4) using broken granite stone 3/4" size

12 c ft	Broken stone 3/4" size	42-0-0	100 c ft	38-10-3
46 c ft	Sand	2-8-0	100 c ft	1-2-5
23 c ft	Cement	98-8-0	25 c ft	90-9-4
46 c ft	Mixing Mortar	4-8-0	100 c ft	2-1-1
92 c ft	Lead for broken stone	8-7-0	100 c ft	7-12-2
46 c ft	Lead for sand	1-9-0	100 c ft	0-11-6
23 c ft	Lead for cement	103-12-6	100 c ft	23-13-11
1/2 no	Mason Delans	2-12-0	each	1-6-0
3 nos	Man Maysdown	1-8-0	each	7-8-0
2 nos	Woman Maysdown	0-13-0	each	3-4-0
	Sundries			0-0-9
				<u>178-10-0</u>

Cement concrete 1:1 1/2:3 mix 50 2/3 % of 1" metal
 and 35 1/3 % of 1/2 to 3/4" metal.

6 1/3 cfr	1" size - metal	30-0-0	100 cl	18-6-5
30 2/3 cfr	1/2" to 3/4" size metal	55-0-0 + 42-0-0	100 cl	14-13-1
6 cfr	Sand	2-8-0	100 cl	1-2-5
0 2/3 cfr	Cement	98-8-0	25 cl	127-53-3
16 cl	Heavy Mortar	4-8-0	100 cl	2-1-1
12 cl	Lead for broken stone	8-7-0	100 cl	7-12-
46 cl	Lead for sand	1-9-0	100 cl	0-41-
30 2/3 cfr	Lead for Cement	103-12-0	100 cl	31-13-
1/2 to	Lead for Delin	2-12-0	100 cl	1-6-
5 nos	Main Mayden	1-8-0	100 cl	7-8-
4 nos	Woman Mayden	0-13-0	100 cl	3-4-
	Sum			0-4-
				210-0

L. Ramanathan Nayyar
 J. E. C. P. Mangalam

Countersigned 11/1/54
 [Signature]

Divisional Engineer (H)
 South Kanara Division
 Mangalore
 20/1/54

Quantity. (1)	Description of work. (2)	Item number in the schedule of rates. (3)	Rate. (4)	Per (5)	Total (6)	Amount. (7)
			Rs. A. P.		Rs. A. P.	
15000 ch	Earthwork excavation and deposition on bank for foundation in all soils except rock requiring blasting		65	✓	700 - -	
700 sq ft	(2) Benchings hard granite rock for foundation of piers and abutments	\$970	14	✓ 158	875 - -	
1750 ch	(3) Cement concrete 1:4:8 using hard granite broken stone 1½" size	Data	102 8	✓	1794 0 0	
			~~172~~	100 ch	~~1700~~	
1400 ch	(4) Coursed Rubble Masonry II Sort in Cement Mortar (1:5)	Data	97 8	✓	1365 0 0	
			~~124~~	100 ch	~~1240~~	
3000 ch	(5) Coursed Rubble Masonry I Sort in Cement Mortar (1:5)	Data	118 4	✓	3548 0 0	
~~82750~~			~~115~~	100 ch	~~3175~~	
350 ch	(6) Cement concrete (1:2:4) using broken granite stone ¾" size	Data	177 0	✓	620 0 0	
			~~166~~	100 ch	~~584~~	
Supervision charges at 5 per cent.					365 - -	
					8902	✓

Grand total, Estimate.

Divisional officer (or other countersigning
officer to be named).

Sanctioned for 192 194

Signature and designation of the officer
submitting this estimate.

Collector or other sanctioning officer (to
be named).

Tahsildar or other officer (to be named).

Quantity.	Description of work.	Item number in the schedule of rates.	Rate.	Per	Total.	Amount.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
			Rs.	A. P.	Rs.	A. P.
1600 ✓ cfr.	(7) Reinforced Cement Concrete 1:2:4 including cost of Cement and steel and including kind tying jacks & cement placing and curing Concrete complete for deck slab.	B. F.			~~8585~~ 8902 0 0 ✓	
		Data	5 0 0 ✓		8000 0 0	
			~~7400~~ 100		~~6200~~	
1750 ✓ cfr.	(8) Dry Stone Masonry for retaining walls of apron.	Data	41 8 0 ✓	100 cfr.	726 - ✓	
500 ✓ cfr.	(9) Cement Concrete 1:1½:3 using 66½% 1" metal and 33½% of ½" metal for wearing coat.	Data	210 0 0 ✓		1050 0 0	
			~~1964~~ 100 cfr.		~~981~~	
1600 ✓ cfr.	(10) Rough Stone Dry packing for apron	Data	36 4 0 ✓	100 cfr.	580 0 0	
					~~576~~ 0 0	
11 ✓ cfr.	(11) Providing granite guide posts over piers.	Data	5 8 - ✓	100	61 0 0 ✓	
	(12) Providing Holding down bars (1" dia rods) with necessary bolts & nuts plates for the bottom against uplift pressure & for anchoring in concrete. Supervision charges at 5 per cent. to granite work.				400 - -	

Grand total, Estimate ~~11500 0 0~~ u

~~17902 0 0~~
19719/-

Divisional officer (or other countersigning officer to be named).

Sanctioned for Rs. 194

Signature and designation of submitting this estimate.

Collector or other sanctioning officer (to be named).

Amount	Total	Per	Rate	Quantity	Location of work	District
(7)	(6)	(5)	(4)	(3)	(2)	(1)

Taluk Kanhal

Village No.

Name of Work No. constructing a
causeway across Thirthattu
on Ajeke Dindarungadi Road.

ESTIMATE ABSTRACT.

Budget head

Main head

Sub-head

[C.No. 1670/54]

G.O. Ms. 1784 dated 25/9/02

Issue 4/299

Abstract: Cts. S. Kawara Area - Block III - Communi-
-cations - Construction of a vented causeway
across Iruattattu River on the Aje Kar-
Indarangaadi road - Estimate - Sanctioned

plej

Read:- From the P.O. Mangalore Ref. C.No.
2263/53-B dated 12-9-'54

Order:-

Sanction is accorded to an expenditure not exceeding Rs 21,000/- (Rupees Twenty one thousand only) being the estimated cost of constructing a veiled causeway across the Thirthattu river on the Ajekar-Dondaraugadi road. The cart track from Ajekar to Dondaraugadi 5 miles and 4 furlongs in length, should be improved by the beneficiaries into a kutcha road. This part of the work estimated to cost Rs 4600/- is considered their contribution. This sanction is counted against the provision under item II. H. Communications in the Budget estimates of this area, approved by the CPA in their letter No CPA 558/5/53 (Bud) dated 6.7.1954.

2. The expenditure should be debited to "63.8. C.D. Projects - H. Communications (works)".

3. The P.O. Mangalore is requested to get the work executed speedily according to the plan and estimate approved by the D.F.(H) Mangalore and returned herewith. A copy of the Completion report should also be submitted to Govt in due course.

CENT
 Date 2-7-94
 Father's Initials

To
 The PEO. Madras (W.F.)
 The A.G. Madras
 The Secy. C.A. Regal Bldgs New Delhi
 The Collector S. Kanara
 The CE (Highways) Madras
 Sri A. Balakrishnan B.A.B., S.A.H.S. A.G. Madras
 Pub. R.D. VII, V. Teel.
 SF-111, 112, 113
 S.C.

[C. B. 12 months]

No. 129 2359-54

30/9/2019

229-54

272379/84

Wm 24952

P.T.O.

O.N.

The letter from the P.O. Mangalore at p/cf may be perused. His proposal to Construct the Causeway at the East of the CP, for the reason that the katcher road is to be formed by the villagers, is acceptable and is in line with the usual practice. The expenditure is covered by provision in the budget estimates approved by the C.P.A.

The P.O. has also proposed the execution of work by the Highways Dept. As the P.O. has not enough Engineering Staff under him, the proposal need not be accepted. General instructions in this regard are proposed to be issued in C.No. 1652 RDP/54 and hence this aspect of the question need not be considered separately.

The draft order above may be approved. The estimate may also be countersigned.

ST

22-9-54

22/9/54

22/9/54

22/9/54

22/9/54

Issued as go. M. No. 17, 84

Dub (R.D.P.) 25/9/54